



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,757	10/22/2003	Hiroaki Suzuki	16869Q-093100US	6703
20350	7590	09/09/2005	EXAMINER	
TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			KAPADIA, VARSHA A	
			ART UNIT	PAPER NUMBER
			2651	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/691,757	<b>Applicant(s)</b> SUZUKI ET AL.	
	<b>Examiner</b> Varsha A. Kapadia	<b>Art Unit</b> 2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,6-10,13,15-17 is/are rejected.
- 7) ☒ Claim(s) 2-3,5,11-12,14,18-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2651

This office action is responsive to the amendment filed on 06/23/05.

**Rejection Under 35 U.S.C. 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 4, 6-10, 13 and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Ferris et al.

With regards to claim 1, Ferris et al discloses a data storage device (see fig.1) comprising:

A write head (see fig.1 elements 4 and 6); a write circuit for generating write current to the head by using a supplied positive and negative voltage (see fig.1 element 8, 16 disclosure thereof and col.1 lines 15-19); a converter for generating negative voltage (see figs. 1-3 element 16 and disclosure thereof); and a controller for variably setting the magnitude of the negative voltage (see fig. 1 element 20 and disclosure thereof).

With regards to claim 4, Ferris et al discloses that the controller sets the magnitude of the negative voltage in accordance with the positive voltage (see col.4 lines 38-61).

With regards to claims 6-7, Ferris et al further discloses that the magnitude of the negative voltage changes when the write head is not performing the write operation, and that the write current value during the write operation is greater than the write current value used after (see col.5 lines 38-53).

Art Unit: 2651

With regards to claims 8-9 and 16-17, see Ferris et al the paragraph bridging cols. 3 and 4 and fig.3 and disclosure thereof;

With regards to claims 10 and 13 and 15 the method and the program steps recited in claims 10, 13-15 corresponds to the apparatus limitations recited in claims 1 and 4 respectively, therefore the rejection applied to apparatus claims 1 and 4 is also applied to claims 10, 13 and 15 for the same reasons of anticipate.

#### **Allowable Subject Matter**

Claims 2-3, 5, 11-12, 14 and 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2-3 and 11 differ from the prior art of the record by further defining that the programmable controller configured to variably set the magnitude of the negative voltage in accordance with an ambient temperature.

Claims 5,12 and 14 differ from the prior art of the record by further defining that the programmable controller sets a large absolute value for the negative voltage if the positive voltage is low and vice versa.

Claim 18 differs from the prior art of record by further reciting that the controller sets the magnitude of the negative voltage in accordance with the average value of the positive voltage.

Claims 19-20 differs from the prior art of record by further reciting that prior to causing the read/write head to perform the seek operation or the write operation computing the difference between the value of the supplied positive voltage and the value of the previous positive voltage;

Art Unit: 2651

wherein the specified condition used in setting the magnitude of the negative voltage is the set difference.

### **Response to Remarks**

Applicant's argument filed on 6/23/05 has been fully considered but is not persuasive. Applicant argues that Ferris et al disclose "The programmable aspect of the PIVR thus refer to controlling the mode of operation of the PIVR, not for variably changing the magnitude of the negative/inverted voltage." Examiner disagree because mode of operation i.e. write mode, read mode, sleep mode or idle mode is the part of the information input the controller. Ferris et al further discloses that the voltage supplied varies relative to these modes of operation hence the magnitude of the negative voltage is set/varied based on the mode of the operation as recited in the claim language by the applicant.

### **Conclusion**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2651

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Varsha A. Kapadia whose telephone number is (571)272-7557.


The examiner can normally be reached on Mon Tue and Thurs. from 6:30 AM to 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571 272 7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



VK



DAVID HUDSPETH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600